

MOZAMBIQUE

FOOD FOR THE HUNGRY INTERNATIONAL

P.L. 480 TITLE II

REVISED HEALTH COMPONENT OF THE DEVELOPMENT ACTIVITY PROPOSAL

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LIST OF ABBREVIATIONS AND TERMS

ACF - Accion Contra Fam
ALRI - Acute Lower Respiratory Infection
ARI - Acute Respiratory Infection
BCG - Tuberculosis Vaccine
CDD - Control Diarrheal Diseases
CUAMM - Colegio Universitario Aspirantes Medicos e Missionarios (Italian NGO)
DAP - Development Activity Proposal
DPT - Diphtheria, Pertussis, Tetanus
FHI -Food for the Hungry International
FHM - Food for the Hungry Mozambique
KPC - Knowledge, Practice, Coverage
MCH - Maternal Child Health
MOH - Ministry of Health
NGO - Non-Governmental Organisation
OPV - Oral Polio Vaccine
ORS - Oral Dehydration Solution
ORT - Oral Dehydration Therapy
PSI - Population Services International
PVO - Private Voluntary Organisation
SD - Standard Deviation
Soccorista - Red Cross trained first aide and village health worker
TBA - Traditional Birth Attendant
TT - Tetanus Toxoid
USAID - United States Agency for International Development

1. EXECUTIVE SUMMARY

To address the food security problem in Mozambique, the health component of this project will address the biological utilization of food, especially in the most vulnerable: the young children and pregnant mothers. If the biological utilization of food is improved by decreasing illnesses that sap the body of strength and calories, nutrition levels will improve without changing food requirements. This program's preventive teachings expect to decrease the burden of sickness from the most common, preventable illnesses. The first issues addressed will be control of diarrheal diseases, nutrition (breast feeding, weaning and vitamin A), immunizations and malaria. After these, we will discuss with the communities which of the following they want addressed and do as many as possible: family planning/child spacing, AIDS, acute respiratory illnesses (ARI) and maternal health. Most performance indicators will be measured monthly, while intermediate indicators will be measured semi-annually. Annual, midterm and final evaluations will be performed.

2. ACTIVITY DESCRIPTION

2.1 Summary of Relevant Baseline Results

2.1.1 Introduction

With the objective of gathering relevant information for decision making in the development of our maternal child health program, a baseline survey was conducted in April of 1997 in the two areas where Food for the Hungry/Mozambique agricultural programs are currently functioning. Two methods were used: focus groups, and the PVO Child Survival Project Rapid Knowledge, Practice and Coverage (KPC) 30-cluster Survey developed by Johns Hopkins University. Three hundred mothers of children under two were interviewed in each area. Members of the FHI/M team were used lead by Libby Grasse, R.N. and assisted by a consultant, Aurelio Gomes, M.D. Results were analyzed by these two and by the incoming project manager, Susan Bolman, M.D. using the Epi-Info program provided by the Centers for Disease Control. Salient results are listed below and the complete report is in the appendix to this document.

2.1.2 Nutrition- Breast feeding and Complementary Feeding

Breast feeding itself is universal, and 90% of the children are fed within the first eight hours of birth. The problem areas are exclusive breast feeding (46%) and appropriate complementary feeding. Fifty-five percent of the mothers felt that a child should begin giving complementary food before 4 months of age. Although most (94%) of children 6-10 months of age are receiving solid/semi-solid foods, this question alone does not indicate appropriate use of complementary food.

Our baseline showed that most children 6-10 months of age are receiving the staple (maize meal) with one or perhaps two other foods added, and that 76% are receiving two or less meals a day. Of the 20-24 month age group, 58% are still being breast fed.

2.1.3 Nutrition- Vitamin A

The policy of the MOH up to this point has been to give vitamin A capsules to those children with night blindness or measles. As a result, 2% of those with health cards had received at least one vitamin A capsule. Though vitamin A rich foods are eaten when seasonally available (59% of the children 6-23 months in the two weeks prior to the survey), there is practically no knowledge of the special importance of consuming these foods. Ninety-six percent of the mothers did not know a food source of vitamin A.

2.1.4 Immunizations

Of children 12-23 months of age, vaccine coverage rates are as follows-

BCG- 59%
OPV1- 63%
OPV3- 47%
DPT1- 62%
DPT3- 51%
Measles- 46%

Mothers of these children-

No TT- 38%
TT1- 62%
≥ 2 doses of TT- 51%

2.1.5 Control of Diarrheal Diseases

Prevalence of diarrhea in the past 2 weeks was 44%. This survey was taken during 'low' season for diarrhea. Of these children, only 39% were getting the same or higher volume of breast milk, and only 30% were getting the same or higher volume of other liquids. Analysed for the same or higher volume of any liquid the percentage was 49. Only 22% gave the same or higher volume of food. Though only 49% were giving the same amount or more liquid, 62% were giving appropriate kinds of liquids. These included ORS packets (50%), salt-water-sugar solution (8%) and rice water (6%). When analyzed for those who were giving the right kinds of fluids AND the right amount of fluid, we found that only **27%** were giving ORT correctly. Although 62% were giving liquids, 60% were giving antibiotics or anti-diarrheals. Only 11% felt they should seek outside help if their child had blood in their diarrhea, though 66% said they should seek assistance if the symptoms lasted over two weeks.

2.1.6 Malaria

Measuring malaria is problematic. Though according to both health care workers and the community it is undoubtedly the most frequent cause of morbidity and mortality, the word for malaria in the local language is equivalent to the word for fever. The prevalence of malaria in the last two weeks in this survey is by mother's report, and was 49%. This survey was taken during 'low' season. There is no question, however, that there is little or no understanding of transmission or prevention of malaria. Only 2% understood that mosquitoes transmit malaria and only 1% each mentioned bed nets, removal of standing water or use of insecticides for prevention of malaria.

2.1.7 Acute Respiratory Illnesses

The survey was taken during 'high' season for ARI. Sixty-three percent of the children were reported to have a cough in the last two weeks, and of those, 54% were reported to have rapid or difficult breathing, for a total of 30% with symptoms of ALRI (acute lower respiratory illness- i.e. pneumonia). Of those with symptoms of ALRI, 61% sought care at an appropriate place (hospital, health post, or county nurse.)

2.1.8 Maternal Health and Family Planning

Only 2% of women who did not want children in the next two years or who were not pregnant were using modern methods of birth control. Forty-two percent of the deliveries occurred without any assistance at all (mother cut the cord), and 43% were attended by a TBA, nurse or in the hospital.

2.2 Goals and Objectives

2.2.1 Goal

The overarching goal of the project is to improve the nutritional status of the children under two in the project area and to lower the mortality rate. Because of the difficulties of measuring mortality accurately in a project of this size, improved nutrition and intermediate objectives will serve as indicators of improved mortality rates. The intermediate indicators are divided into four major categories: nutrition (including breast feeding, complementary feeding and vitamin A), immunizations, control of diarrheal diseases and malaria. Though malaria is the most severe problem in the project areas, it is the most difficult to change and therefore will be the last issue addressed.

2.2.2 Impact and Effect Objectives and Indicators

Life of Project Objective	Impact Indicator	Baseline	Midterm	Final	Verification
1. Adequate Nutritional Status	Percentage of children* in target area above -2 SD median height for age	TBA**			Baseline, Midterm and Final
Intermediate Objectives	Effect Indicators	Baseline	Midterm	Final	Verification
2. Improved Nutrition: Breast Feeding	Percentage of participating children <= 4 months being exclusively breast fed	46%	55%	65%	Semi-Annual Monitoring Form***
3. " "	Percentage of participating children 20-23 months with continued breast feeding	58%	62%	65%	Semi-Annual Monitoring Form
4. Improved Nutrition: Complementary Feeding	Percentage of participating children 6-10 months receiving at least three meals a day	24%	50%	70%	Semi-Annual Monitoring Form
5. " "	Percentage of participating children 6-10 months with oil added to their weaning food	29%	50%	70%	Semi-Annual Monitoring Form
6. Improved Nutrition: Vitamin A	Percentage of participating children 6-23 months who consumed at least one vitamin A rich food the previous day	59% (very seasonal)	70%	80%	Semi-Annual Monitoring Form
7. " "	Percentage of mothers in target area who know at least one category of vitamin A rich foods	4%	30%	60%	Baseline, Midterm and Final
8. " "	Percentage of children 12-23 months in target area who have received one vitamin A capsule in the last six months	1%	50%	70%	Baseline, Midterm and Final
9. " "	Percentage of households in target area with home gardens producing vitamin A rich foods	not known, very low if any	20%	40%	Baseline, Midterm and Final
11. Deworming	Percentage of children 24-35 months who have received a de-worming medication in the last six months	Not measured	50%	70%	Baseline, Midterm and Final
11. Immunizations	Percentage of children 12-23 months in target area with DPT3	49%	56%	62%	Baseline, Midterm and Final

Objective	Indicator	Baseline	Midterm	Final	Verification
12. " "	Percentage of mothers in target area who know when a child should receive the measles vaccine	7%	40%	60%	Baseline, Midterm and Final
13. " "	Percentage of mothers in target area with two or more doses of TT	25%	50%	75%	Baseline, Midterm and Final
14. Control of Diarrheal Diseases	Percentage of participating children with diarrhea in the last 2 weeks	44%	40%	35%	Semi-Annual Monitoring Form
15. " "	Percentage of participating children with diarrhea receiving the same amount or more food	22%	33%	45%	Semi-Annual Monitoring Form
16. " "	Percentage of participating children with diarrhea receiving the same amount or more breast milk	39%	44%	55%	Semi-Annual Monitoring Form
17. " "	Percentage of participating children with diarrhea receiving an increased amount of liquids (ORT)	49%	50%	72%	Semi-Annual Monitoring Form
18. " "	Percentage of participating children with diarrhea being given appropriate oral rehydration liquid	62%	42%	56%	Semi-Annual Monitoring Form
19. " "	Percentage of mothers in target area who know at least 2 major signs of dehydration	not measured	40%	70%	Midterm and Final
20. Malaria	Percentage of mothers in target area who know either how to prevent malaria (impregnated bed nets) or how to decrease deaths from malaria (treat within 24 hrs.)	1%	---	60%	Baseline, Midterm and Final
21. " "	Percentage of children in target area with symptoms of malaria in the last two weeks who were treated within 24 hrs of the onset of symptoms	not measured	---	50%	Midterm and Final

* 'Children' refers to children between 0-23 months of age unless otherwise specified.

** The anthropometric study will be the first activity done when national staff are hired.

*** Indicators measured in the Semi-Annual monitoring form will also be measured in the midterm and final evaluations.

2.2.3 Justification of Indicators-- Changes from original DAP, differences between these and standard indicators

Midterm and Final targets are based in part on data on PVO child survival project performance on these same indicators. (Four to 25 projects were included in the study depending on the indicator.)

1. The general agreement among Cooperating Sponsors in Mozambique is that height for age (stunting) will be measured by all programs. We have been asked to provide anthropometric information to the National Ministry of Health and the Department of Nutrition (Lourdes Fidalgo) to help in assessing the effects of vitamin A supplementation.

2. *Breast Feeding.* Exclusive breast feeding is not the rule and may be much lower than stated as mothers may not have considered an herbal mixture as part of any of the categories questioned. Breast feeding within 8 hours of birth is, however, very prevalent (90%). We intend to encourage this practice but feel no need to have it as part of our information system.

4. *Complementary Feeding Practices.* Because foods are introduced too early in the project areas, the indicator of solid/semi-solid food consumed by infants 6-10 months is high, (94%), but does not reflect good feeding practices. These young children are often only given one or two meals a day (76%), which is not adequate, even with continued breast feeding, to meet their nutritional needs. It is felt that increasing the number of meals a day will do more for the children and be a better indicator of adequate complementary feeding practices. It is not felt that the mothers, who mostly work in the fields all day, will be able to give the recommended five meals a day, but it is hoped that the project can successfully encourage at least three meals a day, perhaps four.

5. *Complementary Feeding Practices.* Adding oil will add calories without adding bulk to the infants food. In addition, the agricultural portion of the DAP program is encouraging edible oil presses. Though this is still a small measure in the agricultural program, it is hoped with increased understanding of it's importance in the diets of infants, we may be able to create an increased demand for oil and for use of edible oil presses.

6-9. *Vitamin A.* The indicators on vitamin A are not included in any of the standard lists of indicators (neither Title II Generic Indicators, USAID\BHR\PVC PVO indicators nor those recommended by USAID Maputo.) Never the less, it is felt that improving the vitamin A status of the children is an important part of the program and one that will decrease morbidity and mortality and consequently improve nutritional status.

Therefore we have included a number of indicators to that effect. Distribution of vitamin A capsules will be added to the vaccine program semi-annually (as agreed to by the MOH and CUAMM). Home gardening of foods high in vitamin A will also be encouraged by both the agricultural and health components of the program. Because knowledge of vitamin A is almost non-existent, it is felt that a knowledge question, as well as practice questions will help measure the effect of the program.

10. Deworming. De-worming will be accomplished with a single dose (500mg) of mebendazole or another appropriate wide-spectrum medication (e.g., albendazole, 400mg). The WHO guidelines for the integrated management of the sick child recommends de-worming every six months for all children between 2 and 5 years of age.

11. Immunizations. The USAID PVC office in Washington recommends OPV3 as a good indicator of complete vaccinations. Recently in Mozambique there have been a number of polio campaigns which have not included any vaccine other than polio. This will elevate the OPV3 rates significantly, but not increase the number of children with complete vaccinations by much. It is therefore felt that the indicator recommended by USAID Maputo, DPT3, will more accurately reflect complete immunizations in our area.

12. Immunizations. Knowledge of the why and when of immunizations is much poorer than the practice, as indicated by the low number of mothers that know when the measles vaccine should be given. Though most of our indicators are practice, it is felt that this knowledge indicator will be useful to track the absorption of our messages on vaccines.

13. CUAMM doctors working in the area report that while diphtheria pertussis and new cases of polio are almost non-existent, and measles has a low incidence and even lower mortality, neonatal tetanus is frequently seen. This is not surprising considering the low rate of TT coverage and the poor coverage of TBAs. CUAMM will continue to train more TBAs, and improved coverage of TT will also ameliorate this situation.

14-19. Diarrhea. These indicators are standard. Because incidence rates are high and appropriate practice rates are fairly low it is felt that teaching in this area could result in a significant improvement in nutritional status and decreased mortality. Information from both the CUAMM doctors and the focus groups indicate that after malaria, diarrhea is both the most common and the most severe disease confronted by the population.

20-21. Malaria. In the focus groups, malaria was consistently brought up as the most severe and frequent disease. Local health care workers echo this. An intervention is felt to be necessary. Indicators were chosen as those most likely to result in decreased mortality. If we are able in the future to find a reasonably

priced reliable source for impregnated bed nets and incorporate that into our program, we will add a practice indicator to that effect. The phrase "symptoms of malaria" was chosen because of the scarcity of resources for adequately testing for malaria. The cost of treatment of children without malaria is insignificant when compared to the cost of non-treatment of cases (disability and death.)

2.3 Proposed Interventions and Key Messages

As seen in the objectives and indicators, the interventions will be broken into four main categories: Nutrition (breast feeding, complementary feeding practices and vitamin A), Immunizations, Control of Diarrheal Diseases (CDD) and Malaria.

2.3.1 Nutrition

This is the area in which co-operation with the agricultural portion of the program will be closest. Along with the key health messages listed below, we will encourage the use of improved varieties of crops, improved methods of using crops (edible oil seed presses), and production of vegetables high in vitamin A, all of which the agricultural program is either investigating or promoting.

In addition to the key messages listed below, we propose to distribute vitamin A capsules and deworming pills (probably mebendazole) every six months. Consumption and production of vitamin A rich foods will be promoted but it will take some time until the idea becomes prevalent and foods are harvested. In the mean time, it is felt that vitamin A capsules will have a significant enough effect on morbidity, mortality and nutritional status to be worth the effort. Permission has been obtained from the MOH at national and district levels for this project. Similarly for parasitic infestation, (felt to be almost universal), hygiene, taught in the CDD section is more sustainable than de-worming. Nevertheless, it has been shown that decreasing the worm burden can have a significant effect on the nutritional status of children by increasing food absorption, appetite and vitamin A absorption and improving anemia in infested children. (same reference.) It will assist in the short term while waiting for better hygiene practices to be adopted.

Key messages:

- Exclusive breast feeding to 4 months (what the MOH recommends)
- Continued breast feeding until 24 months, even if pregnant
- Begin giving complementary food at 4 months
- Add oil to weaning foods
- Add vitamin A rich foods to weaning foods
- Add foods high in protein to weaning foods
- Feed children over 6 months at least 3, preferably 5 times a day

2.3.2 Immunizations

Immunizations are being administered in monthly mobile sessions by the MOH and CUAMM, an Italian NGO assisting the hospitals in each of the districts. Discussions held with the MOH and CUAMM on ways to assist the vaccination efforts have been very positive. CUAMM says that often mothers do not bring their children to more than one or two vaccine sessions, principally because of lack of understanding. FHM's role will be in providing education on the importance of vaccinations and encouragement in participating in the monthly vaccination sessions. Additionally, FHM will occasionally providing transportation and logistical support during a vaccination session. As we are planning on adding distribution of vitamin A capsules and mebendazole to the vaccination sessions every six months, (as mentioned above in 2.3.1) our personnel will assist with this. We have assisted the MOH with transportation during the recent national immunization campaigns.

Key Messages:

- Why vaccinate
- What diseases are prevented
- When vaccines should be received
- How many of each vaccine is necessary
- Why receive TT
- How many doses of TT should be received

2.3.3 Control of Diarrheal Diseases

Acute diarrhea is one of the three major causes of child mortality in Mozambique (World Bank, 1995). In our baseline, taken during low season for diarrhea, we found it to be more common than ALRI, which was at it's high season when the survey was taken. Home treatment of cases will be stressed first, with personal and environmental hygiene following. As mentioned in 2.3.1, deworming will be undertaken with the immunization campaigns.

Key messages:

- When a child has diarrhea:
 - Give extra liquid
 - Start giving liquids immediately
 - Breast feed the child more
 - Use an appropriate liquid (salty soup and sweet tea in the same meal if not dehydrated, and ORS packets and/or rice based rehydration fluids if the disease progresses)
 - Give the same or higher quantity of food
- How to recognize the signs of dehydration and other danger signs during diarrhea
- When to go to the health post- dysentery, chronic (>2 weeks) diarrhea

- It is not necessary to spend money on special medicines unless there is dysentery or chronic diarrhea
- How to purify drinking water
- Personal hygiene (including latrine use) and household cleanliness will diminish the frequency of diarrhea
- Exclusive breast feeding for children under 4 months will be reinforced here.

2.3.4 Malaria

Efforts to combat mortality due to malaria are difficult and will not begin until the other three components of the program are well under way. The main effort in our program will be to combat mortality with promotion of treatment within 24 hours of the onset of symptoms and provision of chloroquine (the MOH allows socorristas [position defined in 4.0] to dispense chloroquine.) Our baseline shows practically no understanding of the transmission and prevention of malaria. Accion Contra La Faim (ACF) is planning a prevention program with insecticide impregnated bed nets. We are anxious to see what results they may have. Ideally we would like to educate the population on the importance of bed nets and set up a micro-enterprise to sell them. These ideas will be considered more fully towards the middle of the project.

Key messages:

- Young children and pregnant women are at highest risk from malaria
- Symptoms and danger signs for acute malaria
- Rapid treatment (within 24 hours) will diminish malaria mortality
- Number of doses in a full course of treatment, importance of taking full course
- Insecticide impregnated bed nets help to prevent malaria (this message will only be taught if a sustainable source of bed nets is found)

2.3.5 Future Interventions

Once these interventions are well under way, we can consider adding further interventions. How soon this will happen depends upon how rapidly the first four interventions are understood by the population. If there are significant cultural barriers to the understanding and adoption of these practices, they may need to be reinforced frequently rather than undertaking new subjects. Once we feel that the first four interventions are well on their way to being understood and adopted, we will discuss with the mothers and community leaders which interventions they would like to address next. Possible interventions include AIDS education, family planning and child spacing, prenatal care/TBA training, and ARI.

2.4 Complementarity

The activities in health were chosen because they are of vital importance and are not currently being addressed in the areas that we work. The MOH and

CUAMM have a curative system, with referrals, already functioning in the area. With the exception of PSI's efforts in AIDS education, there is no other organization currently working in health education and preventive measures. The proposed activities are in line with Strategic Objective 3, the health objective of USAID.

2.5 Key Assumptions and Risks

There are a number of external factors which will greatly affect the ability of the program to improve the nutritional level of the children in the project area. During the most recent growing season, the agricultural output of the area was diminished by excessive rain and severe flooding. Weather changes currently happening indicate that there might be another 'El Niño' weather pattern which would cause drought, possibly for two years. Should agricultural outputs continue to decline, there will be no improvement in nutritional status. Never the less, the health program interventions will be able to mitigate some of the malnutrition and hopefully lead to long lasting health behavior changes.

Additionally, it is not known yet which behaviors are more strongly grounded in the culture and may be harder to change. For example, in some areas, all mothers give a teaspoon of an herbal mixture that is left out without a cover and warmed up before administration daily. This is given to new-borns and young children and is felt to be necessary to the survival of the child. If this belief is strong in our area, achieving exclusive breast feeding will be difficult and take more effort and imagination to accomplish. Until we have people working in the communities, we will not become aware of all of the health beliefs that may help or hinder our activities.

Though we have the enthusiastic support of the MOH at all levels, we have not yet approached the local leaders. We will need acceptance from all levels (community, bairro and mfumo¹), especially the mfumo level as they will assist in choosing health leaders. Because of the high level of participation and support in the agricultural program, we feel we will not have difficulty enlisting the support of the local leaders for this additional program.

2.6 Co-operation with External Agencies

We have found people at all levels of the MOH (national, provincial and district) to be interested in our program and helpful with whatever assistance we might need. The national level departments have provided educational material and permission to distribute vitamin A capsules (as well as a request for anthropometric data before and after vitamin A distribution.)

¹ The communities are of variable size (2,000 to 22,000). They are broken down into multiple barrios, also of variable size. These bairros are further divided into mfumos. Traditionally mfumos consist of ten families with a mfumo leader. Currently, some mfumos are larger.

The provincial level has provided lists of individuals with appropriate levels of training and wishes to co-operate with hiring of the Maternal-Child Health nurses. They propose that though we would provide the salary and the job duties of the nurses, they would be considered to be MOH employees. This would provide them with higher job security than they would otherwise have. We are currently discussing options with the provincial MOH and are still unsure how this will be resolved.

The district offices of the MOH have been most excited about our proposal. They have provided specific names of people already living in the area, and in some cases, working in health (with very basic training) without remuneration. We have already been able to provide assistance to the MOH for immunization campaigns and some limited disaster relief. CUAMM has asked for our assistance with their TBA/Maternal health program in two ways. Firstly, they would like us to suggest candidates for the TBA training once we have some knowledge of the mothers in the area. Secondly, when we are able, to help with hospital transport for identified high risk women who are near term. We will assist in these areas to the best of our ability. CUAMM has also provided us with information and insight into the health problems in the area and barriers that we may come across in the future.

2.7 Sustainability

Maternal-Child Health Nurses- One of the primary points of discussion with the MOH at the provincial level has been the sustainability of the program. We are taking a number of steps that will hopefully lead to this. Though we do not have a final agreement yet, we are being asked by the MOH to hire the two maternal-child health nurses through their auspices. We would choose who to hire, but they would be considered employees of the MOH and receive the same salary as an MOH employee at a similar level. At the conclusion of the project, these people would continue to have a job with the MOH. Since the MOH does not employ people with socorrista training (the level of our health facilitators), this option is not available for the rest of the people we would employ. We foresee some problems arising from the higher levels of pay given to the agricultural employees. However, this will be partially mitigated by the fact that the MOH employees would not have to pay the 30% income tax. In addition, we will consider various non-monetary remunerations, such as rent and district housing improvement.

Health Facilitators- We have been informed by CUAMM and the MOH in Marromeu that there are some people already working in health education in the rural project areas. These people, who have received only the socorrista training given by the Red Cross, are working in the communities as volunteers. Not only do we plan to interview them with the hopes of hiring them as health facilitators for our project, but we also feel that it is feasible to expect at least some of the socorristas to continue their work, albeit on a smaller scale, after the funding

ends. To make this more likely, we are actively looking for people who already live in the project areas (or have relatives in the area) with socorrista training, in hopes that they will establish roots and stay in the area after the project ends.

Health Leaders (Chefes de Saude)- As described in section 4.0, we will be asking the community leaders to appoint women to act as voluntary health leaders for each mfumo (grouping of about ten houses). Once these women have been functioning in that capacity, with training received from the program, it is reasonable that they will continue to be responsible for general health problems within their group. Though they may not continue to do individual house visits with the same frequency that was expected during the program, the community will probably continue to call on them when they have health queries.

Health Posts- Though this is not usually considered as part of the sustainability of the program, the functioning of the health posts is likely to improve as a result of the program. Currently the health posts are overburdened. Many of the problems they are dealing with will be either prevented or treated by the mothers in their homes once the program information is disseminated. This should have the effect of increasing the efficiency of the health posts as they deal with fewer problems, but ones more appropriate to their function.

Home- Most of the issues being covered by the program are health behavior changes. Once these changes occur and the mothers see the benefits of these behaviors, it is unlikely that they will return to previous behaviors. For example, if they exclusively breast feed this child, they will be likely to exclusively breast feed the next, and advise their daughters to do the same.

2.8 Response to Recommendations

In the April 2, 1997 review of the PAA, a number of issues were addressed regarding the health component of the DAP/PAA. In general, it was felt that FHM was taking on too much and had not adequately defined the interventions it would undertake. Partly based on this recommendation and also using information from the baseline study, the district MOH, and CUAMM, we have cut some of the components.

Food Distribution- At the writing of this revised DAP, food distribution is no longer needed and we feel it would not be beneficial to the program. Should the potential El Niño drought occur, this situation may change.

Training of TBAs- For two reasons, this will not be attempted by this program. The first is that CUAMM currently has TBA training programs in one of our areas and hopes to reinstate it in the other. Though it is still small, it exists, and we have agreed with CUAMM to provide some support for their program. Duplicating their efforts would not be an efficient use of resources and would drain efforts from our other projects. Should we decide with the communities to

take this on later, it would be in conjunction with CUAMM's and the MOH's efforts.

ARI- The ARI component is being dropped for two reasons. It is difficult to accomplish any reduction in the incidence of ARI, and, in our area, the incidence of ARI is much lower than that of malaria or diarrhea.

Clarification of the roles of FHI, CUAMM and the MOH- The MOH, with the assistance of CUAMM has been responsible for the functioning of a hospital in each of the project areas. In addition, there are functioning health posts in most of the communities in the project areas, staffed by MOH personnel. The MOH has both occasional country wide vaccination campaigns and monthly mobile vaccination sessions. The only education of the community occurs when a sick child is brought in and advice is given. FHI will take up the education of the community in areas where health behavior change will positively effect the health and nutritional status of the children. Outreach to the community and house to house visits will be done by FHI. We will encourage and assist people in their attendance of the MOH vaccination sessions. We will support CUAMM in their TBA training efforts, both with suggestions of appropriate candidates for their training and educational material as needed. We have been assisting CUAMM with transport of materials for construction of a house for high risk expectant mothers who live too far from the hospital to come once labor starts. We will also, whenever possible, provide transport for those women who are near term and have a card from the hospital indicating that their pregnancy is high risk.

Training of country nationals to assume responsibility for the health component- The initial plan was to have an expatriate district co-ordinator in each project area with eight national health promoters under them. The current plan is to hire one maternal-child health nurse as a counterpart to each District Co-ordinator. We additionally plan to hire more than eight health facilitators (number yet to be determined). The increase in numbers is for two reasons. First, the health facilitators have less training than those initially envisioned and will therefore receive lower salaries. Second, the size of the population in some communities and the disperse nature and large land area of some communities make it extremely difficult for one person to effectively supervise the area. In summary, we will have two highly trained nurses that can function at a supervisory level, and a larger number of nationals trained in health messages and adult education techniques.

AIDS Intervention- AIDS is not top on the list of interventions partly because we feel it is better to take on a limited number of interventions and do them well, rather than take on all possible interventions and do them superficially. Additionally, PSI is working in our areas and is involved in both AIDS education and promotion of condoms. If it is decided with the communities to take on this topic, we would do so with PSI, perhaps inviting their staff to teach our health facilitators.

3. MONITORING AND EVALUATION PLAN

3.1 Baseline Study

A modified KPC survey with 30 clusters in each of the project areas was conducted in May of 1997. A summary of the relevant results was presented at the beginning of this document and copies of the report were delivered to USAID-Maputo, CUAMM and the MOH at both provincial and district levels.

3.2 Program Monitoring

Monthly reports will be collected from the health facilitators listing number of group teaching sessions conducted, attendance at these meetings, number of house visits performed and reasons for house visits, and number of vitamin A capsules and deworming pills distributed. (See table below for output indicators.) In addition, semi-annual surveys will be done to assess knowledge of key messages. Please refer to the table in 2.2.2 for a list of what information will be gathered in the Semi-Annual surveys. These surveys will consist of all of the families in one group for each health facilitator (each group is approximately ten health leaders, each with ten families). About 10% of the total number of mother-beneficiaries will be surveyed. The groups will be chosen randomly and will not be repeated until all the groups have been surveyed. The health facilitators will survey each other's groups. This information will be used to assess the effectiveness of the information being given to the mothers and make necessary modifications or review/reinforce ideas that have not been adopted. Areas where cultural barriers may be impeding the implementation of health behaviors will be pointed out here and investigations can be made as to how to best approach the problems.

This information will be reported to the district level MOH, CUAMM personnel, and most importantly, the communities. The literacy level of communities will be taken into account in our dissemination of information.

3.2.1 Output Indicators

Indicator	Beginning of Activities	Midterm	Final
Number of health facilitators functioning	20	27	27
Training sessions for health facilitators per year	6	5	5
Group meetings per month (to train health leaders)	4/week x 4 weeks x 20 = 320 ideal 280 expected	4 x 4 x 27 = 432 ideal 400 expected	432 ideal 430 expected

Indicator	Beginning of Activities	Midterm	Final
Number of health leaders trained twice monthly	20 facilitators x 8 groups each x 10 leaders per group = 1600 ideal 1200 expected	27 x 8 x 10 = 2160 ideal 1900 expected	2160 ideal 2100 expected
Number of houses visited bi-monthly by health leaders	1600 x 10 = 16,000 ideal 12,000 expected	2160 x 10 = 21,600 ideal 19,000 expected	21,600 ideal 21,000 expected

3.3 Program Evaluation

Over the life of the project, FHI/M proposes the use of a combination of three types of evaluation: an annual internal evaluation, a comprehensive mid-term activity review, and a final external evaluation. FHM will provide an annual report of major evaluation findings to the local USAID mission for inclusion in the Results Review and Resources Request (R-4). In addition, midterm activity review and external impact evaluation reports will be prepared and provided to the local Mission and to BHR/FFP following completion of the studies.

3.3.1 Annual Evaluations

FHI/M's system of internal evaluation of the health program will produce a thorough annual evaluation conducted at the district level and presented and discussed at the provincial and national levels. The nature of the evaluation will be both quantitative and qualitative. Quantitative information will include data from the monitoring system (see above). Qualitative information will include each staff member's evaluation of various criteria including the degree of community participation and organization, the change in knowledge, attitudes, practices of beneficiaries, and program barriers and proposed solutions. In addition, selected beneficiaries will participate in the evaluation by offering their appraisal of program staff, degree of service offered, and the degree to which their felt needs were met by the program during the year. The conclusions of these evaluations will be used to make the necessary recommendations for improving program outputs and impact for the subsequent year.

3.3.2 Comprehensive Mid-Term Activity Review

In addition to the annual internal program evaluations, two more comprehensive program evaluations are scheduled for the life of the DAP activities being proposed--a mid-term activity review and a final external review. Program evaluation will determine the effectiveness in achieving the intended goals and objectives.

The midterm activity review will be conducted in the field during the dry season in 1999 and will focus on evaluation of effect and intermediate impact indicators.

The methodology will be both quantitative and qualitative in nature. A modified KPC survey, focus groups, and anthropometric study will be conducted prior to the qualitative review. The data gathered will be compared with the results of the baseline survey. The evaluation team will include the FHM Head of Programs, Provincial Health Manager, and health program staff. The local USAID mission and MOH will be invited to participate.

3.3.3 Final External Evaluation

The final evaluation will be conducted in 2001. A final evaluation survey will also use a modified KPC survey, focus groups and anthropometric studies. Additional data from the MOH will be compared with that collected from our program. The final evaluation team will include those in the midterm evaluation team plus two external evaluators (one for health and one for agriculture.) Duration of the final evaluation will be one month, with a maximum total cost (health and agriculture) of \$50,000 inclusive of survey execution.

4. IMPLEMENTATION PLAN

The program will be directed by Susan Bolman M.D., M.P.H. (International Health). She will be based in Beira and have administrative and supervisory duties. Each of the two districts will have a District Co-ordinator. Libby Grasse, R.N. will supervise Nhamatanda and Martha McKinley, M.D. will supervise the Marromeu area. Each co-ordinator will have a Mozambican counterpart, a maternal child health nurse. Under these two district level supervisors will be 10-12 paid health facilitators. We will be hiring from the pool of personnel trained at the level of basic nurse, medical agent or socorrista. The latter is a level trained by the Red Cross in first aid, the basic preventive health messages that we will be teaching and adult teaching techniques. We feel that the socorrista level would be the best for community level staff for various reasons: they have basic preventive health training as well as adult education techniques, and they do not have any clinical training and would not be as likely to be distracted from their purpose by frequent requests for clinical care. Additionally, they have governmental permission to distribute a limited number of medications, (UNICEF's Kit C), especially aspirin, ORS packets and chloroquine. The permission to distribute chloroquine is important when we start our intervention in malaria and encourage the people to get treatment within 24 hours of the onset of symptoms. Lastly, people trained at this level receive lower salaries and we will be able to hire more people. They will be just as effective as more highly trained nurses in the interventions we have planned. This will allow us to more thoroughly cover a larger population.

Each of the health facilitators will be responsible for eight groups (defined below). They will hold meetings with each group for about two hours every two weeks (one group meeting four times a week.) The groups will consist of 10-13

volunteer mothers who will be considered 'health leaders' (chefs de saude) for a collection of about ten families.

The traditional structure of the area includes 'communities' which can be quite large (from 2,000 to 22,000 estimated total population). The communities are broken down into "bairros" of variable size, which are in turn broken down into "mfumos." Traditionally the mfumos consisted of ten families. Currently, some of the mfumos are much larger. Where this is the case, we will ask the communities to divide themselves into smaller groups for the purpose of our health activities. The leaders of each mfumo, with the help of their group of families, will be asked to choose one woman to be the health leader for that collection of families. Each of the health leaders will be responsible for attending the meetings every other week and visiting each of the families assigned to them in the ensuing two weeks to pass on the health messages. They will have the option of individual house visits or group meetings, depending on what they are more comfortable with and find most successful. In this way we have the possibility of including close to 100% of the families with young children in the area. Health leaders will be encouraged to make sure that any older siblings who have child care responsibilities are also present when the information is presented to the mother.

The health facilitators' regular responsibilities will include:

- teaching the groups of health leaders four times a week for 2-3 hours each,
- supervising the health leaders and accompanying them on home visits, especially to homes of sick children,
- tending their gardens (providing a role model for vitamin A production),
- maintaining their portion of the information system, and
- attending weekly district meetings.

In addition to the home visits, health facilitators and health leaders will occasionally attend the early morning agricultural program meeting (>50% women) to present skits or puppet shows based on the messages currently being given by the health leaders. Lastly, health games appropriate for illiterates will be made available for the health facilitators to use when community groups convene.

A similarly structured program is currently being run by World Relief in Chokwe in the province of Gaza. They have been able to maintain very high levels of motivation and attendance with this system. They feel that 10 families is a reasonable number for one volunteer to visit. Each health leader receives educational materials to assist in her teachings.

To assist with the motivation of the health leaders, in addition to educational material, various low cost possibilities will be considered. Identical head scarves, given to all of the health leaders and health facilitators to help point

them out to the community, worked well in Gaza. Other ideas include capalanas (traditional cloths used as skirts etc.) with pictures of health messages or T-shirts.

FY 1998 Annual Health Implementation Plan

Activity	O	N	D	J	F	M	A	M	J	J	A	S
Continue Coordination and collaboration with MOH and CUAMM												
Hire National Staff												
Continue to meet with community leaders												
Form Groups												
Choose Health Leaders												
Develop Educational Material for use by Health Leaders												
Develop Health Facilitator Training Program												
Train Health Facilitators												
Anthropometric Study												
Train Health Leaders												
Bi-weekly home visits to mothers												
Implement Monitoring System												
Assist MOH with vaccine campaigns												
Ditstribute vitamin A capsules												
Distribute Mebendazole												
Distribute seeds for home gardens												

FY 1999 - 2001 Annual Health Implementation Plan

Activity	O	N	D	J	F	M	A	M	J	J	A	S
Continue Coordination and collaboration with MOH and CUAMM												
Continue to meet with community leaders												
Develop Educational Material for use by Health Leaders												
Develop Health Facilitator Training Program												
Train Health Facilitators												
Anthropometric Study												
Train Health Leaders												
Bi-weekly home visits to mothers												
Implement Monitoring System												
Assist MOH with vaccine campaigns												
Ditstribute vitamin A capsules												
Distribute Mebendazole												

Five Year Time-Phased Health Implementation Plan

ACTIVITY	FY 97	FY 98	FY 99	FY 00	FY 01
Staff Recritment					
Initial procurment					
Field office rehabilitation					
Annual work plans					
Annual evaluation					
Semi-Annual reporting					
Anthropometric survey					
Conduct baseline survey					
Copnduct midpoint impact survey					
Conduct final impact survey					
International conference participation					

5. ACTIVITY RESOURCE REQUIREMENTS

5.1 Human Resources

All personnel listed below will devote 100% of their time to the health component of the DAP. In addition, the Country Director, Sharon Schoenhals will spend 10% of her time and the Projects Manager, Scott Clark will spend 30% of his time on the health component.

5.1.1 Susan Bolman MD (University of Hawaii), MPH (International Health, Loma Linda University), specialty training in Family Practice and Preventive Medicine. Technical assistant to the Director of the Child Survival project with FHI Bolivia from 1989-1992. Responsibilities in this project included training of nationals, the management information system and report writing. Taught primary health care at the University of the Nations in Hawaii from 1993 to June 1997. Between those two positions, worked in a Cambodian refugee camp on the Thai border supervising the out patient clinic and the TB hospital. Languages- English, Spanish, basic Portuguese.

5.1.2 Libby Grasse RN (Goshen College Indiana, Public Health, Orange County, California). Overseas experience in public health and prevention: Guatemala- two years, training national community health workers; Somalia, Rwanda, Zaire, and Angola- four years, set up and management of relief and development programs. Taught seminars in primary health care and emergency health care. Languages- English, Spanish, basic Portuguese, K'ekchi (Mayan dialect).

5.1.3 Martha McKinley MD (Dominican Republic), pediatrics and obstetrics. Worked with the Peace Corps in Guatemala and Guinea-Bissau. Responsible for community health programs. Experience in nutrition (especially development of appropriate high calorie weaning foods from locally available foods), AIDS and home gardening. Wrote training manual for health education and has trained nurses and midwives. Languages- Spanish, Portuguese, English, two Mayan dialects and Crioulo (Guinea-Bissau).

5.1.4 National staff - Interviews are currently underway.

5.2 Financial Resources

See the PAA Budget